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NATURAL HISTORY IN PUBLIC SCHOOLS.

Extract from a paper read before the Hampden County Association, at Springfield, May 15.

IN order to know what place Natural History should have in our public schools, and how it should be taught there, we must keep in mind the ends to be secured by the work of these schools. I conceive this work to be, to give momentum towards, and as far as possible to secure, a healthy development of the physical, intellectual, and moral natures of their pupils; to give pupils a relish for protracted, patient, thorough work; to enable them quickly and clearly to distinguish resemblances and differences, and consequently to think well; to give them power to marshal and to focus all their powers for the accomplishment of any desired end; to give them disposition and ability to help themselves and others on towards perfection. The end is discipline, culture, rather than the acquisition of knowledge, though it should be observed that we get no real knowledge, except through methods of study which result in culture. When children enter the public schools, they are rather sharp observers, but their observations are mainly of superficial, salient features. They are industrious but unsteady, without method,—humming-birds sipping a little here, a little there, abiding nowhere long. Their curiosity is not to be repressed, but directed. They are to be led gradually, but steadily, to clearer and completer perceptions, to greater accuracy of expression and description, to a knowledge

of relations, to classifications, to principles and laws. What provision is made in our courses of study for the supply of the wants of these hungry souls? What food do we feed them to fit them for kingship and priesthood in the kingdom of Nature and of God? Why, we immediately cut them off from communion with Nature, and put them at once to a diet of Mathematics! And of this we force them to partake, with few interruptions, to the end of their college course. To this we add a shorter course in Geography, in which, for the most part, pupils are required neither to observe nor to reflect, but simply to remember the statements of others,—statements whose accuracy it is impossible for them to verify or to deny.

We fill up and round out all our courses below the High School course with Language. But instead of introducing Language as it becomes necessary for the expression of ideas and thoughts acquired and produced by the mental activity of our pupils, and thus teaching pupils to use language discriminatingly, we serve it up, not necessarily, not wisely, but under the circumstances rather naturally, by the chapter or page or column, often with no regard for the sense, to be stored away in some imaginary attic as a fund to be drawn upon to meet the probable contingencies of practical life. Now, bearing in mind that real success in all departments of life is based upon a capacity for exhaustive observation, that such observation lies at the foundation of all forms of mental activity, that childhood and youth are Nature's appointed time for the development of the perceptive faculties, that to neglect the cultivation of these faculties at this time is not merely to *postpone*, but practically to *prevent* their development, we can see how shamefully inadequate are the provisions of our schools, and especially of our common schools, of which I was requested to speak. "Mathematics," in the language of an eminent authority, "knows nothing of observation, nothing of induction, nothing of experiment, nothing of causation." Political Geography, the only kind taught to any extent in our common schools, calls, as I have already said, for little exercise of the perceptive faculties; and the study of Language is little better. Now we may appropriately inquire, "Is the introduction of Natural History into our schools a thing greatly to be desired?"

Would it furnish a remedy for existing evils?" The study of Natural History promotes physical vigor, by frequently calling to moderate and varied exercise in the pure air, under the vitalizing influence of the sun, to exercise which is doubly profitable, because taken under conditions that draw the attention away from the exercise itself.

Proficiency in doing anything is the inevitable result of long-continued, judicious practice in doing that thing. Instead of knowing *nothing* about "observation and experiment," Natural History knows *all* about them. It has its beginning in observations; from observations and experiments it can never be divorced. Its hypotheses and its theories must be based upon observed facts. Nothing is regarded as proved until it has been subjected to some "*experimentum crucis*." The phenomena it presents are exhaustless. Its phenomena are suited to minds of every grade; the simplest are within the grasp of the child in its earliest months: the most complex will ever baffle the highest powers of the human intellect.

It must be evident that the study of Natural History is admirably adapted to cultivate the perceptive powers. It might easily be shown that it makes ample provision for the development of the reflective powers, the memory, and the imagination; I may safely leave that with you. Had I time I would show here that Natural History furnishes us the best means for training our pupils to fluency and accuracy in the use of language. This point might well form the subject of a separate paper.

But I must say a word with regard to the influence of a proper study of nature on the formation of character. We learn to admire beauty and nobility by seeing and knowing objects that are beautiful and noble. We act wisely, when, desiring for ourselves true manhood, we steadfastly bring ourselves into the closest possible relations to those who are wisest and best. At great expense many brave the perils of ocean to view the works of art in other lands. In galleries and temples the true man beholds and gains refinement and depth and breadth and strength. The venture is a profitable one. But whether at home or abroad, we are all in a temple "*not made with hands*," a temple full of beauty and glory and perfection, unapproachable

by the highest human skill. How much we might do for our pupils by reverently guiding them, through contemplation of this beauty and glory and perfection, to communion with and likeness to the Great Author of all!

The best way to secure virtuous conduct on the part of our pupils is to beget in them such self-respect as will make them feel above doing any mean thing. The boy who refuses to do wrong, not because another may find him out, but because he shall "know it himself," is safe. How can we better beget such a sense of honor in our pupils than by leading them to see what honor and dignity God has put upon them in placing them over all these wondrous works, causing all things to minister to their wants, — in creating them in His own image, and thus making it possible to hold communion with Him? Think of Arithmetic and Political Geography in comparison!

Allow me to say to those who contend for what is miscalled "practical" in our school work, that the difference between even a little knowledge of Natural History and the absence of such knowledge may be the difference between the life and the death of a tribe or a nation. An illustration or two must suffice: A few years ago, a portion of Switzerland, having unwisely made war upon the birds, was in imminent danger of starvation from the ravages of insects, upon which the birds had fed. The peril was so great that the government offered liberal bounties for the destruction of the animals and their eggs. Having no crops to harvest and no encouragement to plough or to sow, the people had abundant leisure; their partial starvation gave them the requisite will; and long processions of men, women, and children, on foot and in carts, might soon have been seen bearing their common enemy by the pint, the quart, the peck, the bushel, the cart-load, to claim the offered bounty. The authorities were almost literally overwhelmed with their purchases. What to do with the pests was now the question. Finally they sagely determined to bury them in the earth, — and bury them they did! They saved the insects the trouble of digging for themselves, and made sure of a full crop for the next year.

Let me come nearer home. For some time previous to the year 1868 the trees in the neighborhood of Boston had been

infested by a white-spotted caterpillar ; in that year this caterpillar appeared in largely increased numbers. Says Dr. Thomas M. Brewer, who has kindly furnished me with these facts, " They were seen crawling about over the ground. All the trees on the Common, our larger elms most of all, were covered with their cocoons, in the centre of which their eggs were laid. These were most numerous in the upper branches, where they could not be reached. I sounded the alarm in our newspapers, and our city forester set his men at work scraping the trees. But it was like bailing out the ocean, and the expense was about five hundred dollars a day to the city. In the mean while our sparrows (they had imported some twenty pairs of European sparrows in the spring of that year) had increased to seventy-five pairs. They were at work all the winter and the spring, climbing more like woodpeckers than perchers, gathering these clusters of eggs. The next summer (1869) there were a few left, and now they have all disappeared. I do not believe that a million of dollars employed in any other way could have accomplished what one hundred and fifty European sparrows did in a single season." I need not inform you that in Eastern Massachusetts and in Southeastern New Hampshire, orchards that yielded thousands of barrels of fruit fifteen years ago have recently been almost as barren as the posts in our fences. In our own county the case is not so bad ; but here the industrious *curculio* ploughs its crescent furrow and plants its eggs unscared, and the result is, that from the orchards on a hundred farms, in an average fruit year, you will hardly be able to cull a single barrel of fair fruit. To somebody's knowledge of Natural History we owe our improved breeds of domestic animals, our most delicious and important fruits.

Alas! have I been dreaming? Is this all visionary talk? It must be so. Our statute laws make no provision for the systematic teaching of Natural History in our public schools. You may search in vain for any such provision in most, if not in all, our town and city courses. Our Normal Schools, training teachers mainly for the common schools, devote from three to ten or more times as much time to *Algebra* even, as to any branch of Natural History. I see before me a gentleman who has two children at school: one is a young man, a Senior in one of our

first-class colleges ; the other is a girl of nine years, in an intermediate school. Both are now studying Elementary Botany, *doing exactly the same kind of work*. I believe the young man is improving his first opportunity for this study. The only thing exceptional in the case is, that the girl is privileged to put off what is far beyond her capacity, and engage in what is easily within her grasp, and that furnishes most excellent discipline for all her powers. What a commentary are such cases upon our public school system ! Shall we say, rather, lack of system ? The difficulties in the way of introducing the systematic teaching of Natural History into the public schools are few, but some of them are formidable. Those presented by the courses of study might easily be overcome. The lack of trained teachers in this department is a much more serious matter. With all the deplorable apathy that now exists in regard to this subject, the demand for good teachers is far greater than the supply. Burdened as they now are, teachers cannot fit themselves for doing *good* work in this department. One of our most pressing needs at the present time is the introduction into our system of public instruction of the principle of the "division of labor." No man can teach well Language, Mathematics, Geography, History, Physics, Chemistry, Botany, Zoölogy, Mineralogy, Geology, and Astronomy. Even in shoe-making, where the operations are few and simple, where a shoe may be made by a single person in less than an hour, much more work and much better work can be accomplished by a given number of workmen, if each man does some particular part of the work and that only. How much more in this work of developing mind, forming character, building up men and women, where processes are complicated, the work extended over many years ! What a teacher teaches in one day should be but a small part of what he knows. The teacher should be a general, not a corporal, taking in a large field, having a definite end in view, and shaping all his work for the accomplishment of that end.

The city of Springfield employs one teacher of music for all her public schools. Holyoke and Westfield do the same. Why should not each of these places employ, in like manner, a teacher of Natural History ?

Let us now suppose we are permitted to teach Natural History,

but are required also to teach all the other branches prescribed for the schools. What can we do, and how shall we do it? From the nature of the case, our work must be very limited, very fragmentary; but what we do, we may do in such a way that, wherever we stop, our labor will not be lost. We may give our pupils a bias in the right direction. The fact that we can do so little should make us doubly careful to do that little well. How then shall we teach? The principles of good teaching in any branch are the same as for every other branch. There is only one right method of teaching. We may advantageously seek for variety in the application of this method. Only with loss, and that loss unspeakable, can there be any variation from the method. The mind grows, gains power, only by its own activity. To read what another has written of some object, or to hear what he may say of it, requires a certain kind of activity. To make an examination of the object for one's self and find its structure and its qualities requires another and very different kind of activity. The first may give power to remember words, but can never excite new ideas; the second gives knowledge of things, power to perceive resemblances and differences, to form correct and independent judgments, and furnishes the only possible foundation for the intelligent and forcible use of language, by exciting clear, well-defined ideas. The first kind of activity tends strongly to prevent the second, and as a rule is worse than useless, inasmuch as it not only wastes the time of the pupil, but creates an indisposition for honest, profitable labor. I counsel you, therefore, to bring your pupils face to face with Nature. Yet I would not be understood as recommending that a pupil should never be permitted to read. After he has made a protracted study of some object, a study that seems to him to be exhaustive, I would say to him, "You have done very well. If you continue as you have begun, you will soon be able to do excellently." Then I would put into his hands a monograph on the same subject by the hand of a master, and ask him to read it. He will find recorded all he has himself learned, and probably find that he has seen but a small part of what reveals itself to the trained eye. He will be encouraged to return to the object of his study for a more searching examination. To ask him to read the same

words before he had investigated for himself would only do him harm.

It makes very little difference with what we begin. But let us take something common, easily obtained.

Make your teaching *methodical*. Let each day's lesson have some connection with what goes before, and what follows. Let all be done with reference to the future wants of your pupils.

Let the teaching be *comparative*. Each of several unlike, but related things will be seen and understood much better if studied in connection with the others.

As far as possible, make the teaching *exhaustive*. This will often require much time to be spent upon a single subject. Complaint is made of some of our schools, that their pupils "do not get along." It is exceedingly unfortunate that the charge does not lie against a greater number of schools. The Natural History field is, as I have said, exceedingly fertile; we have but to "tickle it with a hoe, and it will laugh with a harvest." But its most precious treasures lie below the surface; for these we must dig and sift. By judicious guiding in such work, we may beget in our pupils a *relish* for patient, careful research, and such a relish is *genius*. The fact is, that instead of making no progress by this kind of work we can make progress in no other way. Encourage your pupils to *picture* what they see. "A pencil is one of the best of eyes."

Require *verbal descriptions*, and thus give your pupils an opportunity to learn to use the language well, by actually making use of it under your direction.

J. G. SCOTT.

REMARKS.

It will never do to put the proper title of this article at the head of it.

Unless I can contrive to steal a march upon the reader, he will hardly consent to consider again certain propositions which I wish to submit to him; of which the first is, there is no necessary antagonism between faithful study and sound health.

At the first view the evidence against this statement seems

overwhelming. The very expression "a hard student" calls up to most minds a pale face and slender form. Near the graduation of a recent college class containing ninety-nine members, one of the most thoughtful and intelligent men in it said, "I do not think a single man in the class, who has attempted to be faithful to the prescribed course, has come through it with unimpaired health." That statement, with at least a show of truth, has great force. And yet though study doubtless helps to break down the health of many a promising college student, the blame does not belong to the study, his proper burden, but to the great weight of business, of pleasure, and of bad habits he throws on the top of his load.

Doubtless all who read the "Massachusetts Teacher" believe that God made man; that when He made him, He formed a tolerably sensible and consistent plan of what was to be created; and since he was to be "a kind of first fruits of his creatures," that this plan contemplated a high development of his intellectual powers. If, then, faithful study necessarily undermines the health, either the Divine plan fails, or it does not reach as far as we have supposed.

Fortunately, there are not wanting examples both of illustrious and of ordinary persons, to show that it is not the activity of the mind, but the unfavorable conditions under which it is exercised, that works such mischief with the body.

Ministers, as a class, devote their lives to study, but their days are not shortened thereby. The amount of intellectual labor some of them perform is simply prodigious. If Albert Barnes was broken down by study, the amount of work and the length of time required to do it give great encouragement to all students. If mental activity and fruitfulness use up a man, how is it that Mr. Beecher still stands so straight, and looks so full and round and rosy? Shakespeare makes Cæsar say, "Yon Cassius hath a lean and hungry look; he thinks too much." And yet such men as Socrates, Newton, Kent, Goethe, Humboldt, and Agassiz did considerable thinking in their day, apparently without physical harm.

Those who say that man was made for a trooper or a sportsman, and that if he thinks he does so at the expense of his phys-

ical soundness, dwarf humanity and dishonor God. Study does not necessarily make a man sick, any more than hoeing corn or weighing out tea and codfish. Immediately beside this conclusion, I wish to place a second proposition, to wit : Going to school is an unhealthy employment, the getting of an education a dangerous undertaking. A boy required to pass through the primary, the grammar, and the high school, and then take a course in college, or the girl who must ascend the successive grades necessary to give her a finished education, is exposed to physical danger and harm hardly less than the young man who enlists in the army and starts out on a military campaign.

The friends of the young soldier, when he is ready to depart, hold him back tenderly, and with tearful eyes cast into the future a glance of anxiety and alarm ; but when the little traveller starts on his long, tedious, perilous educational journey, his friends urge him forward with cheerful insensibility. If they could foresee some of the ambushes into which he may fall, some of the insidious attacks from invisible enemies to which he may be exposed, though they might not dare to withdraw him from the contest, their increased watchfulness and wisdom would be a perpetual fortification for him.

Americans are charged with being a nation of invalids. It is of course a caricature to speak of " universal feebleness " ; but the reader will doubtless admit that those who possess sound health are exceptions, while those who lay claim to good health are a minority in this most excellent Commonwealth of Massachusetts.

There is no lack of causes for this most lamentable state : climate, dress, unwholesome diet, whiskey, tobacco, late hours, hurry, worry, overwork, are ever-flowing fountains, pouring their separate streams into the general reservoir of physical depravity, and they seem amply sufficient to account for the facts. But what is here claimed and urged is that to this catalogue of influences, injurious to the general health, schools must be added.

Whatever of good or bad naturally results from school-life must be singularly pervasive in the community. One fifth of the population of Massachusetts is under its impress at one time, and in a few successive years, the whole of it : thus its bless-

ings, which are beyond compare, reach everywhere, like the sunshine which revives every slumbering bud in the forest and warms every blade of grass on the wide prairie; and its harm, if it does any, must spread just as far as the miasma, which, diffused through the atmosphere, must be inhaled by everything that breathes.

We seldom get unmixed good in this world, and we may not expect to remove from school-life every harmful influence; but to diminish them even by a little is worthy the most earnest effort. To this end I wish to speak of worry, overwork, compulsory labor, foul air, and bad seats. As I run over these points, and query with myself whether anything needs to be said upon them, I am reminded of a man who went out to hoe his corn. Looking at the corn thoughtfully, he said, "This hill will do well enough without hoeing; this one will never come to anything if it is hoed," but of a few doubtful ones he took a little care. So of those who glance at this article: to some I need not speak at all, for they feel the full force of these evils, and are doing their best to counteract them; to others I need not say anything, for they have neither knowledge of the evils nor faith in the remedies; but to a few who stand between these, a word of suggestion may be a help.

In the Report of the State Board of Health just issued, there is an article entitled "School Hygiene." Two statements in it impress me deeply. First, that even in high places, ventilation is still painfully insufficient; second, that the difficulty admits of a remedy.

So much has been said, and so much is now clearly known of the harmfulness of breathing foul air, it would seem safe to infer that our school managers use the best means within their reach to avoid it, and that if pupils are not supplied with pure air in costly school-houses, it is because the solution of the problem has been found practically impossible.

But in the Report of the State Board may be found the following:—

"One of the school-houses presented in the report of the State Board of Education for 1873, as a MODEL, on the warming and ventilating of which much thought and care had been bestowed,

ical soundness, dwarf humanity and dishonor God. Study does not necessarily make a man sick, any more than hoeing corn or weighing out tea and codfish. Immediately beside this conclusion, I wish to place a second proposition, to wit: Going to school is an unhealthy employment, the getting of an education a dangerous undertaking. A boy required to pass through the primary, the grammar, and the high school, and then take a course in college, or the girl who must ascend the successive grades necessary to give her a finished education, is exposed to physical danger and harm hardly less than the young man who enlists in the army and starts out on a military campaign.

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"One of the school-houses presented in the report of the State Board of Education for 1873, as a MODEL, on the warming and ventilating of which much thought and care had been bestowed,

was visited in December, 1873, and this is the report: 'I visited several rooms and found the air offensive in all, the odor being such as one would imagine old boots, dirty clothes, and perspiration would make if boiled down together. The master says he knows of no school-house where good ventilation is secured, and our superintendent of schools says the same.'

"The new Harvard school-house in Cambridgeport bears examination better, the report on it by the master being, 'The ventilation, though not perfect, is very good. On the whole, I should say the ventilation is a success, considering the miserable failures which occur in the majority of cases.'"

Of a private school-house in Boston, the Report says, "An instance of *completely satisfactory* arrangements for heating and ventilation, working well at all times and supplying to the school-room during severe winter weather an atmosphere like that of June, and in which one is warm enough at sixty-five degrees Fahrenheit. *Exactly this system might be applied to public schools.* It necessitates in a building that would accommodate one hundred and fifty or two hundred scholars, an additional outlay of not more than \$450, and perhaps twenty-five per cent more fuel. It is substantially the same system which has been advocated by the best authorities for the past ten years."

I, myself, visited one of the grammar schools of Pittsfield, a few months ago, and found air fully answering to that of the *model* school-house, above described. I went thence to the work-room of the jail, where the air seemed pure and sweet. A visit to the Westfield Normal School last winter made me acquainted with a school-room in the building of the "School of Observation," where the air seemed wholly without taint after three hours' use. This was not only exceptional in my experience, it was wholly unparalleled. And I am fully of the opinion that school-children are generally compelled to sit and work in ill-ventilated rooms, and that, too, in Massachusetts, in 1874, when people know that children die if they don't breathe, and that the citadels of their little bodies are set wide open to the attacks of disease if they do not breathe *pure* air. The evil is very serious. A remedy seems to be within reach.

Again, going to school tends to distortion of the spine, and

distortion is as fruitful of ills as a corrupt government to the body politic. Dr. Jarvis, a good authority in physiology, says, "The habits of school-children, and especially of girls, create a fearful frequency of spinal distortion." He quotes Dr. Warren as saying, "Of the well-educated females within my sphere of experience, about one half are affected with some degree of distortion of the spine." Many think the ratio much larger.

The most common way in which this happens, I will attempt to explain. The posterior view of the natural spine presents two curvatures, one convex at the shoulders, the other, deeply concave, just above the hips.

If the reader is sufficiently interested in the subject, let him sit down in an ordinary chair, leaving a space of about four inches behind him. Then let him lean against the back of the chair, and drop the small of the back as low as possible. The lower curve of the spine is either straightened, or curved backward. Let this attitude be repeated and continued, till the bones get set in that position, and you have the posture which characterizes school-girls in the higher grades, the posture so much desired by some fashionable young ladies, but which disorders the whole animal economy, and endangers the health in a thousand ways. This dislocation of the internal organs is especially hazardous to girls, but is not confined to them by any means, for it reaches the stomach and the organs of the chest, because the backward bending of the spine below tends irresistibly to throw it forward above. Now, the subject of this deformity is nearly ready to find something personal to himself on every page of the patent-medicine almanac. One thing that surprises me in this connection, is that our upholsterers seem to have entered into a deep-laid conspiracy to promote and perpetuate the evil begun at the school-house. I never in my life saw a chair that would support the back of one sitting in an *erect*, normal attitude, from the upper point of the hips to the lowest point of the shoulder-blades. Some are found that do this when the body is inclined backward from the seat fifteen or twenty degrees. These seem exceedingly rare and precious, but they are of course for rest and not for work.

There is no room here to discuss remedies for this very prev-

alent and very serious evil. The writer has a project of making his fortune some day, by constructing a chair suitable for people to sit in; but he has so little faith that his efforts, even if successful, would be appreciated, that he does not wish any of his readers to feel debarred from a similar undertaking. That coming man, who shall invent and introduce an adjustable and somewhat elastic chair back, that can be made to fit and support the natural curve of the back, should have the admiration of men and the affectionate gratitude of women.

Teachers need to watch very carefully, lest in stimulating to effort, they cause harm by overwork. To some teachers, who feel discouraged and disgusted by the little their pupils seem to accomplish, this statement may seem absurd; but they should remember that when they are belaboring the laggards, the leaders hear the sound of it, and need to be soothed, checked, restrained. The pressure which they bring to bear on the school falls most heavily on two classes: those who least need it, and those who can least bear it, — the studious or ambitious, and the anxious and sensitive natures. Doctor Winsor, in his report, says of them, "They are spurred to an unnatural effort in order to drag along the mass of the school, the heavier and healthier natures, at a rate which they would not otherwise attempt; in which process, the strain falls of course on the leaders, or on those who seek in vain to lead. They become worried and nervous. Fortunate is the average child, who can shed this worry as a duck sheds rain, who leaves all thought of school behind when he leaves the school-house, and is absorbed in his play. If girls could do this, equally with boys, school would less often harm them. One of the worst things that can be said of our present school system is that this evil of 'worry' falls most heavily on those scholars who are longest and most completely under that system." We are very apt to under-estimate this danger because we feel that the general fault of our school is in an opposite direction, — too much idleness, too great indifference. But if a few suffer harm, and if those few are the leaders and flowers of the school, let us remember how precious these choice spirits are, and watch over them very carefully. The Confederates lost more power when Stonewall Jackson fell than by the capture of ten thousand veterans. The

sharp-shooter that could have "drawn a bead" on Sheridan would have won half a dozen battles in an instant. The scourge that smites the best does dreadful execution.

Another reason why his labor is wearing to the pupil is, that he is so generally moved to it, not by his own appetite, but by some "*vis a terge*." His feeling is that he is performing tasks, not acquiring knowledge; not seeking after truth, but trying to get a good mark. Losing the impulse of spontaneity, he is shorn of half his strength, and so is jaded out by a burden which, if self-imposed, he could carry out at arm's-length. No one feels this more than the college student. Doubtless, pupils will be compelled to learn prescribed tasks as long as the world stands, but they work at an immense disadvantage, and must take the consequences of it. Thus we see that there are still serious evils connected with our schools, which may, for the most part, be greatly ameliorated.

If any school-committee-man chance to read these lines, he is hereby admonished to do what in him lies to see that his school-children have good air, the best possible arrangement of seats and desks, a proper method and amount of work, and a quiet spirit. These fully secured, we should destroy many of those "little foxes that spoil the vines, for our vines have tender grapes."

A. B. M.

THE EDUCATIONAL VALUE OF MUSIC.

BY PROF. B. C. BLODGETT.

WHEN Dr. Lowell Mason returned from his studies in Europe, in 1840, there was no stronger desire in his heart than to introduce the study of music into the public schools of his native land, as he found it in all the schools of every grade in Germany. This became one of the most determined purposes of his professional life, and (though he did not live to carry it out in full) the amount of success that crowned his efforts, in spite of prejudice and opposition, as well from the musical as the unmusical, was, in his often-expressed opinion, the great achievement of his life. His first success was only to secure a half-hour of recess from

study, once a week, in some half a dozen schools in and about Boston, in order "that he might amuse and interest the pupils by singing to and with them." His thought, however, was not merely to entertain the scholars, — not to provide an interesting and innocent manner of spending a recess, — but to make music a *branch of study*, co-ordinate with the others pursued in the school. In these thirty odd years, since that time, the public sentiment in regard to the matter has undergone great changes, so that the question now is not at all as he found it, nor indeed precisely as he left it. It is now so universally admitted that singing is an important element in the emotional and moral atmosphere of the school-room, that no wise teacher is willing to do his work without it; but there seems yet to be very little opinion and no systematic work whatever, that is based upon a correct estimate of the value of music as a means of *education and culture*, co-ordinate with history, poetry, and mathematics. The most advanced feeling seems to be that it is a valuable and (perhaps even) ennobling recreation, and, in some cases, a useful acquirement for the entertainment of friends, or the possible procurement of a livelihood in the event of need; but the aim of the present paper is to show that this estimate is only secondary, and wholly unworthy; that music should take rank among the most important means by which educators seek to secure for their pupils symmetrical development of mind and character. Let it be understood at the outset, that by *music* is here meant not merely the power to sing or play, but a comprehensive (though not necessarily exhaustive) study of the principles and practice of the art.

The foundation of all the objection to our proposition, that deserves notice, is the feeling that art has reference only to the æsthetic side of our nature, is wholly unpractical, appeals only to the emotions and the imagination. If this were true, our position would still be in strict analogy with everything about us; for is not the marriage of majesty and beauty, of strength and loveliness, everywhere apparent in nature; and not only without conflict, but with a vast increase of mutual attractions? Strength exalts and heightens beauty, and beauty lends its varied charms to strength. So in the curriculum, the beautiful as well as the useful should be provided for; for the latter (unless dis-

torted and rendered unworthy of its place in a system of study that aims at *culture* rather than mere *information*) includes the former, and is only complete when in harmonious accord with it. Allowing, then, to the so-called practical studies their due value, we cannot, without harm, be unmindful of that side of our mental and spiritual life which has its principal outlook towards the beautiful, or fail to make provision for it in our plans of education and refinement. Indeed, it may further be said that the highest forms of the true and the good as well as the beautiful are not found in the *actual* but in the *ideal*; hence the peculiar value of those art studies which are calculated to develop and refine the imagination, and fill the mind with forms of symmetry and beauty. If there ever was a time when "Cui bono?" was the all-important question, that time is not now; sheer utilitarianism is very far from being the noblest philosophy of our day.

But in the second place, we totally object to the statement that music is purely unpractical, wholly æsthetic; and the argument upon which this objection is based is alike drawn from reason and history. It is well known that the great reformer, Luther, attached great importance to music as a means of education. He says, "It is beneficial in the highest degree to keep youth in continual practice in this art, for *it renders people intellectual*; therefore it is necessary to introduce the practice of music into the schools; and a schoolmaster must know how to sing or I do not respect him." The laws of musical form and performance, from the simplest principles of notation and rhythm to the grandest attainments in logical construction and interpretation, are purely mathematical, and do therefore from the outset (when properly taught) bring into exercise and tend to develop the same powers — attention, exactness of thought, and precision of expression — as do geometry or algebra, though, unlike these, they are clothed with the most beautiful drapery of art; and the stalwart trunk of certitudes and fixities is covered with a living foliage and fruitage of the most delicate refinement. There is no essential difference whatever between the process by which a musician unfolds and develops his theme, and that by which the essayist or poet does the same thing, save what belongs to the more or less subtle forms and delicate shades of expression of

which they severally make use ; the same forcefulness and conciseness of theme-enunciation, logical consecutiveness in unfolding and elaboration, comprehensiveness and effectiveness at climacteric points, together with all that pertains to the imagination in illustration and ornamentation, belong as absolutely to musical as to literary composition ; so that whatever gain, in any phase of mental strengthening or equipment, is properly to be expected from a study of the latter, is also of the former. Then the physical features of our study—the training of certain muscles, whether of the vocal apparatus or of the hand and wrist, the difficulty attending which cannot be at all understood by those who have never attempted it—surely ought not to be left out of view, if we would form an estimate of its educational value. Self-control, concentration of thought and effort, self-consciousness, moral and mental vigor,—all these are the natural product of much persistent and unwearying practice, which must be continued year after year before even a respectable *technique* can be attained ; and these are the essential elements of true culture. “If music be a language,” says an eminent writer recently, “if it be, moreover, the language of the passions, as authors have described it, we must not therefore imagine that sound conveys *only* sentiment. Music has a phraseology as varied and perhaps even more diversified than words can assume. Language defines the thought precisely : music, on the contrary, addresses a whole class of perceptions. A certain series of notes will excite our sensibility to a general but undefined feeling of grandeur or pathos or elegance, without, perhaps, producing one single perfect image—emotions merely ; yet it is obvious that these emotions attend as certainly on passages of a given kind as that definite ideas are conveyed by a particular set of words. It happens, then, that there is the same choice in musical as in conversational or epistolary phraseology ; and we apprehend that elevation and polish are attained by the same means in one case as the other,—by a naturally delicate apprehension, by memory, by a power of assimilating what is great or elegant, and by a diligent study of the best models.” Dr. Samuel Johnson, an authority whose strength of intellect and purity of character none will question, says, “The science of musical sounds, though it may

have been depreciated as appealing only to the ear, and affording nothing more than a momentary and fugitive delight, may with justice be considered as *the art* that unites corporal with intellectual pleasures." In Napoleon's oft-quoted address at Milan in 1797 occurs this passage: "Of all the fine arts, music is that which has most influence on the passions, and which the legislator ought most to encourage. A musical composition of an intellectual character, if the work of a master, never fails to touch the feelings; and it has more influence on the mind than a good moral book, which convinces our reason but does not influence our habits." It would be easy to summon a formidable array of such testimony from men who, though not musicians, saw the value and power of music as a factor in the educational work. We forbear altogether to mention the uniform and enthusiastic witness of all musicians, from Gregory to Wagner, lest it should be judged partial and one-sided; but this witness is wonderfully full and concurrent, being the conviction of those who *know* the value of the art, as personal pupils and teachers.

And the argument from history is equally conclusive. The story of such men as Handel, Bach, and Beethoven, who developed gigantic powers of mind with scarcely any other opportunities or means of education than those afforded by their beloved art, proves our statement decisively. Not to speak of the grandeur of their conceptions (which may by some be attributed to *original genius*, whatever that may be), their power of unfolding them, and their mastery of all forms of expression as shown in the exhaustive analysis and majestic elaboration of their themes, were simply colossal. Nor are they exceptions, save in degree, to the thousands who, in their various spheres, have opened mind and heart to the formative, disciplining, and at the same time refining and chastening, influence of true music. But we shall here be met by the objection that the musicians whom we know are not ordinarily men of thought, that they often seem to lack sadly in general culture and training, not to say, also, in moral character. In answer to this, it is important to observe that many who claim to be musicians are such only in name; the power of musical culture is not to be fairly judged by them. A true musician, one who is able and accustomed to interpret the sublime concep-

tions of the great masters, and whose innermost soul responds to them, "as face answereth to face in a glass," is always a person of mental strength and culture, even though (as is rarely the case) he is ignorant of books, and unused to what is called cultivated society. It is safe to say, with one of the best American critics, that "In the vast majority of cases, in which the best of Bach, Beethoven, Chopin, Mendelssohn, has passed into one, and there become assimilated with his inmost life and individuality, there can lack no human culture that would be rich enough to exchange for it"; and especially is this true when we remember that by virtue of this one possession he is sensitively open, mind and heart, to every hint of truth and beauty in nature, poetry, art, history, philosophy, or science. In saying this, however, we must not be understood to plead for the *exclusive* study of music. There are doubtless many people over whom art cannot exercise much influence, because of their natural make-up, or their mental and spiritual constitution or habits; and even in the most favorable case, and in all cases, the great value of a general culture is gladly conceded. Our object is simply to show that music is a branch of study, as earnest and important in the great work of mind-culture as any other, and not a mere accomplishment or superficial adornment. Let it be so regarded by parents and teachers, and the senseless waste of time in "piano-thrumming," and foolish, hyper-sensational vocalism, will at once cease; and in its place will come (in the case of those who are able to use it) a serious, earnest study of what Schiller called "The Royal Art of all Arts," which is capable of placing the student in an atmosphere most congenial to the best and most symmetrical development; as he comes under the ennobling and refining influence of the grandest and most inspiring thoughts, couched in forms of expression far more delicate and intrinsically graceful than is any form of speech, opening up the richest sources of mental and spiritual enjoyment, in the revelation (more or less complete) of that Divine Mystery, the Beautiful,—until the ear hears it, the mind conceives it, the inmost soul rejoices in it, and the whole being feels it, as it were the breath of God.

CONCENTRATION OF POWER ON FEW STUDIES.

ONE evil, doubtless, in many of our High Schools, and certainly in most Academies and other private schools, is the pursuit of many studies at once. One cause of this is the limited time that certain pupils can be in school, and the desire of parents that they should possess "general information" on a variety of subjects. Such parents seem not to know that one valuable acquirement at school, and perhaps the most valuable, is the power rightly to seize and apply the facts of nature about us, and the "information" which throughout life lies everywhere within our reach.

Another reason urged for having many studies at once, is that the faculties of the human mind are various, and that such a course gives opportunity for their simultaneous development. This reason would have some force, if the opportunity were really given, though even then it might be said that what was gained in variety was lost in power. But most teachers will probably agree that such a division of energies has, in most cases, one of the following results: it either prevents effectual work in any study, in consequence of the dissipation of mental force, or it leads the student to pursue earnestly his favorite one, to the neglect of the others. Where the latter is the case, the evil to the individual pupil is probably not great, though the injury to the classes in the studies he neglects, resulting from the presence and example of the delinquent, may be considerable.

The more general ill effect, however, is the former, *i. e.* the preventing effectual work in any direction. The effort to bring the mind to the point of interest in any study fails, in consequence of the necessity of thrusting this subject aside for another, before the mind has become sufficiently absorbed with it to infuse real energy into the work, or perhaps just when it has become thus absorbed. This results in the gradual destruction of the power of concentration of thought, and consequently the advantages which would come from the right application of this power are never realized. Who can see our youth losing this power of intense and earnest effort, without feeling that it is a matter of

exceeding importance that something be done to remedy the evil?

In regard to the number of studies that can profitably be pursued at a time, various circumstances must have influence in determining; but we should say that the cases are very rare where more than two studies besides an art study (music, drawing, or painting) would be well, particularly if these two are the one a Language and the other Mathematics or a Natural Science. But in these two the lessons should be of sufficient length to embrace enough of the subject to awaken desire to know more of it, without being so long as to prevent opportunity for reading in connection with it. In the study of Languages, there should be time for reading works upon their relation to other Languages and upon their literature. Such reading will give zest to study. Biographical reading adds interest to History, and books of travels are well combined with either Geography or History. Roman Mythology, and all works relating to habits of life and of thought among the Romans, are suitable to be read in connection with the Latin Classics. If one study is a Natural Science, as Botany, for example, there should be time for the pupil to observe and study from Nature herself.

Where there is no art study, it may be well to combine two lighter studies that complement each other, as Geography and History, with a heavy study, like Mathematics or a Language. The special combinations adapted to any school will depend upon the studies to be pursued in the course.

We think the practice of alternating studies (*i. e.* having recitations in different studies alternate days) open to the same objections that apply to having many studies at a time. One case, however, where this might be desirable is where two modern languages, whose grammar has already been thoroughly mastered, are continued with bi- or tri-weekly recitations in the latter part of a school course. Again, sometimes a teacher, upon taking a class in Latin Classics, finds his pupils ignorant of Ancient Geography, and therefore makes this study alternate temporarily with the Latin once a week. This may be well in such cases, where the interruption helps bind together rather than disintegrate what has been acquired, as it is the line of the

general principle of not having the mind directed to too many unlike things simultaneously.

Observation and experience both incline us very strongly to the opinion that where the school course embraces many branches, it is far better to take few at once, and complete them, if necessary, in a proportionally shorter space of time, than to have them crowding upon each other in the way they do when many are attempted at a time.

Is there not danger that the frequent change of mental occupation, attendant upon such crowding, may beget in our youth a weakness and fickleness of character which we should all deeply deplore? and is it not possible that some of the loose mental habits we do lament are in part the result of such training?

We are not unaware of the difficulties that lie in the way of determining judicious and satisfactory courses of study; but everything that helps us to a just view of present evils will be a step towards this end. Parents desire the best good of their children. If they can be convinced wherein it lies, they will not be less eager than we that their sons and daughters should learn in a way that will make their knowledge available; and they will therefore welcome any plan that promises to prepare their children to enter active life with minds awake to its work, and so disciplined that their energies can be efficiently applied.

EMILY J. LEONARD.

Pittsfield.

VERMONT DEPARTMENT.

H. T. FULLER AND J. C. W. COXE, EDITORS.

EDITORIAL NOTES.

AGAIN we have no well-digested article for this department. Amid the multifarious duties of the last weeks of the school year, teachers whose intention and purpose to contribute to "The Teacher" have been of the best sort, have found it impossible to do more than their ordinary duties, and the editor for this month has been unusually overburdened through the illness of one of his assistants. We look for the garnering of plenty of ripe sheaves of thought and experience during the vacation, and hope that hereafter the columns assigned to us may show that Vermont teachers are not mere drudges, but live thinkers.

GENERAL INTELLIGENCE.

SPECIAL NOTICE. — Contributions for the Vermont Department of the "Teacher" for August should be sent to J. C. W. Coxe, Montpelier, not later than July 12. Items of news, and notices of school anniversaries, are particularly solicited.

LYNDON. — The closing exercises of Lyndon Literary Institution occurred on Friday, June 5. Examinations of classes were well sustained, and the exercises of the graduating class in the evening were very creditable. This school is under the special patronage of the Free Baptists, was started in 1870, and has had for two years as Principal, Mr. J. S. Brown, a graduate of Brown University.

ST. JOHNSBURY HIGH SCHOOL loses after the close of this year its Principal, Mr. W. H. Galbraith, A. B., and its assistant, Miss Katie Boles. Both have done excellent work, and we wish them much prosperity in the future.

Mr. Chas. A. Savage, for three years teacher of Latin and Natural Science in St. Johnsbury Academy, has been appointed tutor of Greek in Dartmouth College, but declines this position and has accepted the post of instructor of Civil Engineering in Roberts College, Constantinople. Miss Mary E. Cum-

mings, also for more than three years teacher in the Academy, has resigned on account of ill health. At the close of her work a few weeks ago, her pupils made her the recipient of a valuable gold chain. Mr. Edgar L. Morse, of the Senior Class of Dartmouth College, takes the place of Mr. Savage.

The anniversary exercises of the Academy occurred on Thursday and Friday, June 18 and 19. The examinations were well sustained, and the orations and essays of the graduating class were very creditable.

MONTPELIER. — The following is the order of exercises at the close of the term of the Methodist Conference Seminary. June 28th. — Annual Sermon, by the Principal, Rev. J. C. W. Coxe, A. M. June 29th. — Address, Rev. A. D. Smith, D. D., President of Dartmouth College. June 30th. — Address before the Æsthetic Society, by Rev. B. K. Pierce, D. D., Editor of "Zion's Herald." July 1. — Anniversary of Alumni Association. Orator, C. W. Clarke, Esq., Chelsea; Poet, Mrs. O. W. Scott, New Market, N. H. July 2d. — Commencement. Number of graduates, 10.

E. W. Westgate declines a re-election as Principal of the Montpelier Union School and Washington County Grammar School.

B. F. Leggett, for two years past teacher of Natural Science in the Montpelier Seminary, resigns and goes next year to Concordville, Pa.

BURLINGTON. — The programme of the seventieth commencement of the University of Vermont and State Agricultural College is as follows: —

SUNDAY, JULY 5.

10.30 A. M. — Baccalaureate Discourse, by the President.

7.30 P. M. — Anniversary of the Society for Religious Inquiry.

Address by Rev. L. O. Brastow, of Burlington.

MONDAY, JULY 6.

8 A. M. and 2 P. M. — Examination for admission to the University, at College Rooms.

3 P. M. — Address before the Medical class, by Dr. L. C. Butler, of Essex, President of Vermont Medical Society.

8 P. M. — Commencement Concert at City Hall.

TUESDAY, JULY 7.

9 A. M. — Annual meeting of the Phi Beta Kappa at Institute Hall.

10 A. M. — Meeting of Alumni at College Chapel.

3 P. M. — Celebration of the Phi Beta Kappa. Oration by Col. Homer B. Sprague, of Brooklyn, N. Y.

5 P. M. — Dinner and Social Reunion of Medical Alumni.

7.30 P. M. — Junior Exhibition.

WEDNESDAY, JULY 8.

10.30 A. M. — Procession from College.

11 A. M. — Orations of Graduating Class, Master's Oration and Conferring of Degrees.

3 P. M. — Corporation Dinner.

8 P. M. — Commencement Levee at the President's house.

MIDDLEBURY. — Commencement of Middlebury College occurs July 12-16. It is reported (we hope the "Rutland Herald" will take no offence at this simple repetition of a mere newspaper paragraph) that Rev. Hiram Mead, of Oberlin, O., declines any tender of the presidency from the *corporation* of the college.

BARRE. — Barre Academy closed its twenty-second year on the tenth of June. During all this time it has been under the charge of the same Principal, J. S. Spaulding, LL. D., who is now probably the senior teacher in the State, and has always been one of the most efficient. The examinations of the school, especially of the senior class, were made by President Buckham of the University of Vermont, and Rev. C. W. Clark of Daysville. Sabbath evening, July 5th, Rev. L. Tenney preached to the graduating class from Rom. 1 : 14. Monday evening was devoted to the Middle Class Exhibition. Tuesday P. M., the Alumni Association were addressed by Rev. J. J. Lewis of Boston, and in the evening of the same day, Prof. E. D. Sanborn of Dartmouth College delivered an oration before the Literary Societies. Wednesday, June 10th, was devoted to the exercises of the graduating class, the largest ever sent forth from the school. A committee, consisting of J. B. Richardson and C. A. Smith, were chosen by the Alumni to raise funds for the increase of the library.

Goddard Seminary at Barre ended its year, June 28th to July 1st, with a Baccalaureate by Rev. J. E. Wright, of Montpelier, annual address by Rev. A. J. Canfield, Chelsea, Mass. ; poem by Rev. E. J. Chaffel of Chester, and the usual exercises of the graduating class, sixteen in number.

RESIDENT EDITOR'S DEPARTMENT.

DURING the coming vacation, there will be two important meetings of educators, and we know of no more pleasant and profitable excursions than those furnished by these gatherings.

Arrangements have been made with most of the railroads for fare at greatly reduced prices, and an almost unlimited choice of routes. THE AMERICAN INSTITUTE OF INSTRUCTION holds its annual session at North Adams; and, while the farthest thing in the world from a "bore" itself, to any one interested in education, it will be very near the biggest "bore" in the State, — if we except, perhaps, the discussion that is now going on at the State House, as to the manner of using it. Our wise men and *augurs* there, of whom we have several of considerable capacity, although aiming at the same point, are not so successful in getting through the legislature as the engineers were in getting through the mountain. This would seem to indicate that political engineering — though perhaps there is as much of it done — is not yet reduced to the exactness of *civil* engineering, of which it is not always a branch.

But, leaving this great hole in the mountain, which it cost the State so much to make, and which it is costing so much to get a feasible plan of utilizing through the craniums of our legislators, — we wish to say that all that is wanting to make the meeting at North Adams a success is a *full attendance of teachers*.

The lectures and discussions last year, at Concord, N. H., were of the most interesting and important character, and it is not creditable to New England teachers that the attendance is not greater. The limited circulation of our periodicals, and the small attendance at these meetings, where our best educators give us the results of their study and experience, evince a lack of professional interest — not to say enthusiasm — on the part of the great body of teachers, which makes us almost blush to speak of teaching as a *profession*.

Let us, this year, have such a gathering of teachers at North Adams, from all parts of the State and of New England, that the community shall take knowledge of us that we are in earnest, and that there is a spirit among us that will not rest satisfied with present results.

Closely following the meeting of the American Institute, the NATIONAL EDUCATIONAL ASSOCIATION will hold its annual session at Detroit. Arrangements have already been made with railroads, by which tickets for the round trip may be obtained for about twenty-five dollars, by way of Portland, Montreal, Toronto, etc. Also with the Vermont Central; Boston, Concord and Montpelier; St. Alban's; Fitchburg; Bellows Falls and St. Alban's; Ogdensburg, by rail, thence by boat, — meals and state-room included, for

twenty-eight dollars. By this route, for an extra dollar, one can spend five or six hours at Niagara.

The fact, however, that this furnishes some of the cheapest and most pleasant excursions of the season is the smallest inducement to a teacher who sets a due value upon these meetings. Here every department of education has its claims allowed, from the primary school to the college, — and the suggestions and experience of the best thinkers and the best practical teachers in each department, and from every State in the Union, cannot fail to be of the greatest interest and value to any teacher who is trying to find “a more excellent way.”

SPELLING.

TEACHERS seem to be pretty well agreed on two points with reference to teaching spelling. First, that it is acquired chiefly by the *eye*; and secondly, — and naturally following from this, — that an injury is done whenever a pupil *sees* a word spelled incorrectly. The same principle holds, of course, in oral spelling. *Hearing* a word spelled wrong is only a less evil, because the impression upon the *ear* is less permanent than that upon the *eye*.

Now, how can we, to the greatest extent, avoid incorrect spelling in our recitations? In oral spelling, the pupils hear a difficult word spelled wrong three, four, or a half dozen times, and right once. Which will make the most lasting impression, especially when the pupil can see no *reason* why one is wrong and the other right? The same may be said of written spelling from memory. If he spells it wrong, and then corrects it, the eye — so far as that lesson goes — is as much accustomed to the wrong as to the right. But how can this liability be avoided?

Suppose that we give up oral spelling from *memory* entirely, and let the pupil spell with the words before him. This will require him to *look* at the printed word as a whole, and to see and hear the letters and syllables in their due order. Then let him write the words, not from memory, but from the book. This will keep his eye still longer upon the printed word, and show him how it looks when written.

But it may be objected, that this will furnish no *test* by which to *mark* the recitation, and that, therefore, it would be impossible to rank pupils according to their per cent in correct spelling. This objection is, undoubtedly, a valid one, if the exercise in spelling is to be regarded simply as a *game* in percentage. But if the object is to make good spellers, we think the test may be left to the written exercises in composition, when, from the nature of the case, they must spell from memory.

HAVE THE CHILDREN IN OUR SCHOOLS THE ABILITY AND THE TIME TO LEARN ARITHMETIC?

"A PLEA FOR THE INNOCENTS."

[*Read before the Superintendents' Association, at Boston, by E. A. Hubbard.*]

At a meeting of this Association a year or more ago, the query was raised whether children of the ages of those in the lower classes in our Grammar Schools are capable of understanding arithmetic; the fear was expressed that we are requiring more of them than they can perform, and the conviction uttered that we are spending too much time to too little purpose upon that subject. Since that, in other educational meetings, and from other sources, something of the same nature has appeared, and the remedy proposed seems to be to teach less the philosophy, and more the processes of arithmetic. With much that is stated, I am in full sympathy. I have no doubt that sometimes the philosophy is too exclusively taught, and the processes insufficiently. The pupil needs to know what to do and how to do it. If we teach him the latter, how to multiply and divide, but leave him so that he does not know whether to multiply or divide, he is not educated. Nor is he if we so teach him that he knows that he ought to multiply or divide, but knows not how to do either. I have no doubt that much more time is spent upon arithmetic than ought to be, but I do not assent to the remedy proposed; and if we are to "advance backward," in the language of a new-fledged captain, I desire that it shall at least be "with measured step and slow."

I began my teaching before the philosophy of things was taught in the section of the State in which I lived, and arithmetic was studied, I dare not say was taught, in several of my schools while I knew nothing but processes. The definition was, "Arithmetic is the *art* of computing by numbers," and never was a treatise upon any subject truer to a definition, for there was not a particle of science in it. I look back upon those days of school, with the horror of "the burnt child," and with the conscience of our mourning over lost opportunities, and therefore I hope to be pardoned for bringing up again this trite subject and for discussing it from my standpoint.

So far, then, as I discuss the question of the "ability and time" of the pupil, I take the affirmative, and in my "plea for the innocents," I put the blame upon authors and teachers. "The fault, dear Brutus, is not in our *stars*, but in ourselves that we are underlings."

We abuse the children when we ask them to explain first truths — to give a reason, when no reason can be given. I heard a teacher in a Primary School ask a little girl why one with four made five, forgetting that neither teacher nor pupil could tell that. So we ask why half of six is three, or ask for an analysis of the multiplication table, or the division table; for example, 3 times 3 are how many; 3 times 1, etc. 8 are how many times 2? 8 are as many times 2, as 2 is contained in 8, which is saying, 8 is as many times 2 as it is times 2. Wonderful!

Again, in the midst of the pupil's reasoning, we break the thread of connection or criticism, and when he cannot gather up and unite the two ends, we say he cannot reason.

Example. A girl. If five children can sit, etc. This is made much worse where we require the child to state the problem, and solve it without the aid of the book, and so divide his attention between the *conditions* of the problem and the *analysis* of the problem, and compel him to hold both in mind. The time for the exercise in *language* is when the problem is solved.

Again, we teach the child nonsense, and then wonder that he does not distinguish sense from nonsense. Take this question. How many hours would it take you to travel 10 miles, if you travel 3 miles in an hour? It would take as many hours, as 3 miles is contained in 10 miles. I quote from an arithmetic and its key, and ask how many hours is 3 miles in 10 miles. I quote again. A man bought 30 apples, at the rate of 3 for a cent; how many cents did they come to? and the key says, they cost as many cents as there are 3 apples in 30 apples; that is 10 cents. Hence we see that 3 apples are in 30 apples, 10 cents. I quote from another author, and to save time, quote only the conclusion. "Therefore there must have been as many beggars as 2 is contained in 12, which are 6 beggars." Especially remember: a well-educated and successful teacher, in her written examination upon a question which asked her to find how long time 3 men would require to mow 7 acres, after finding that they could mow 5 acres in one day, wrote that it would take them as long as 5 in 7, and I asked how long is 5 in 7. The child is asked how many pounds of cheese, at 9 cents a pound, can be bought for 27 cents, and is allowed to say as many pounds of cheese as 9 cents is 27 cents. Some authors state these things better, but just such statements as these are made and accepted in many and many a school in our State.

Again, we give the same reason for taking two courses, the one directly opposite to the other. If we are changing \mathcal{L} to s , we multiply by 20, because 20 s . make a \mathcal{L} ; and if we are changing s . to \mathcal{L} , we divide by 20, because 20 s . make a \mathcal{L} ; and so, as whatever we do, we do because 20 s . make a \mathcal{L} , is it strange that the child does not see from the reasoning whether to do this or that?

Again, we teach the pupil to put two things together as premise and conclusion, when the latter does not grow out of the former. The logicians call this, I believe, a *non sequitur*. Take for example this question. If 1 hat costs five dollars, how much will 3 hats cost? We teach the pupil to say, If 1 hat cost five dollars, 3 hats will cost 3 times as much. Now the fact that 3 hats will cost 3 times as much as one, does not depend at all upon one hat costing five dollars. If one hat cost any other number of dollars, 2 or 3, or 4 or 8, 3 would cost 3 times as much. We might as well say if it is pleasant to-morrow, day after to-morrow will be Sunday. If to-day is Friday, day after to-morrow will be Sunday, whether it rain or shine to-morrow.

Again, we do not bring distinctly before the pupil's mind that from which he is to reason, naming it first, and that towards which he is to work, naming it last, but we make him begin where he ought to leave off. To illustrate.

How many thirds are there in 5. We teach the child to say, If there are 3 thirds in one, in 5 there will be 5 times 3 thirds, etc.; and the child puts it, If there are 3 thirds in one, in 5 there will be 3 times 5, and there is no reasoning in it. Now that from which he is to reason is the unit, and that towards which he is to work is thirds. If, then, we teach him to say since, not if, there is no doubt about it, since in *one* there are 3 thirds, in 5 there will be 5 times 3 thirds, he will see much more clearly *from* what and *towards* what he is working.

Another example. Nine is $\frac{3}{5}$ of what number? We teach the child to say, If 9 is $\frac{3}{5}$ of some number, $\frac{1}{5}$ is $\frac{1}{3}$ of 9, and $\frac{5}{5}$, etc. But 9 corresponds to the number we are seeking, and should not be named first; and the unit, or the fraction of the unit, is what we are to reason from, and should be named first. If $\frac{3}{5}$ of some number is 9, $\frac{1}{5}$ is $\frac{1}{3}$ of 9, and $\frac{5}{5}$, etc. In concrete numbers we do the same thing. If $1\frac{1}{2}$ yards will make a cape, how many yards will make 3 capes? If a clerk can copy 5 pages in an hour, how many pages can he copy in 8 hours?

Again, we start the pupil in one direction when the goal lies in the opposite, and to reach it, he must either turn about or go backwards; and when we turn him about and he becomes confused, we say he does not know the points of compass; and when we compel him to go backwards and he stumbles, we say he can't see. There is one class of examples in which we habitually do this. For instance. If 8 pounds of butter cost 2 dollars, how many pounds can be bought for 3 dollars? We teach this analysis. If 8 pounds cost 2 dollars, 1 pound will cost $\frac{1}{8}$ of 2 dollars, or $\frac{2}{8}$ or $\frac{1}{4}$ of a dollar. True, every word of it; but there's no question about the price of butter; and having gone so far in the wrong direction, how shall we become right? The question is how many *pounds*, not what price; and we no more need to know the price of butter, than the color of the cow that gave the milk, or the nationality of the maid who churned the cream. The analysis was *true*, but not *good*. We are told what is true of 2 dollars, and are required to find what is true of 3. If 2 dollars will buy 8 pounds, 1 dollar will buy $\frac{1}{2}$ of 8 pounds, or 4 pounds, — and 3 dollars, 3 times 4 pounds, or 12 pounds. The question asked is, how many pounds, and from the first we have worked towards pounds. We do the same thing with fractional numbers.

To a company of fifty teachers I gave this: If $\frac{3}{4}$ of a pound of tea cost $\frac{1}{2}$ dollars, how much of that tea can be bought for $\frac{2}{3}$ of a dollar? And between twenty-five and thirty of them found, or tried to find, the price of a pound for the unit of measurement, rather than the quantity one dollar would buy. This tendency to ask *one* question, and reply to another, is strikingly seen in problems in compound proportion, whether we solve them by analysis or by proportion. If the question is, how many *horses* can be kept for a certain number of days upon a certain number of bushels of oats, one will tell how long the oats will last the horses, another how many bushels the horses will eat, and some will mix the two in the same problem. I once gave to a company of forty teachers this problem: If 6 horses can be kept 16 days on 21 bushels of oats, how many horses can be kept 12 days

n 9 bushels? Twelve of them worked towards *time*, trying to answer the question of how long; five towards quantity, the question of how many bushels; and three towards both, trying to answer I know not what question.

When I hear the solution of such problems, I am often reminded of the experience of a deaf man in my younger years. He had a beautiful horse that he was very proud of. We would ask him, How old is your horse? and he not hearing the question, would say, "See his ears." We would ask, What did you pay for him? "What a neck he has," would be the answer. Where did you find him? "How wide he is between his eyes;" and we teach scholars to analyze oftentimes with nearly as little reference to the questions asked as the deaf man to our questions.

We fail to appreciate the power of directness, and therefore lose in clearness and vividness of impression. We lose also in time; and I fully believe that time is to be saved, not by teaching less philosophically, but more philosophically.

We can save time in the recitation, by omitting the *therefores*, unless they come so spontaneously that they are stated before we can check the pupil, for a *therefore said*, but not *seen*, is of no possible value, while one *seen* though not said is of great value.

We lose time also, when, having taught a principle fully for its own sake, that the pupil may understand it thoroughly, we teach it in the same way, require the pupil to unfold it with the same completeness, when it occurs incidentally in a problem.

To illustrate. I was present at the recitation of a class which in two years was to be fitted for the High School. The lesson was in the addition of compound numbers. The examples involved only two or three quantities, but five or six denominations in each. The pupil called upon, added the quantities in the lowest denomination, then reduced it to the next higher, and analyzed the reduction as fully as he would if that was the subject under consideration. Then he did the same thing with the next denomination, and so on through the entire example. Then another took an example in the same way. Then the review lesson of two examples was called for and the process repeated, and then two more examples assigned for the next day's lesson. Feeling that the class ought to work a page of such examples in the time allowed, I asked, Do you give only two for a lesson? and the reply was, it is as many as the class has time to recite as thoroughly as I wish to have them; and so time was lost because the teacher did not recognize the difference between a principle to be taught, and a tool to be used.

We lose time by requiring the pupil to so study his problems that he can carry them in his mind without the aid of the book in the recitation, practically forgetting that the ability to repeat the whole book, shows only that we have learned *an* arithmetic, and not arithmetic.

Much time also is lost upon a large number of problems under different heads, but involving only a single principle. We have ordinarily about fifty pages of our arithmetics devoted to denominate numbers, — the reduction, addition, subtraction, multiplication, and division of compound numbers.

When a pupil is once made to understand the principle, and the application of it to one or two of the weights or measures, if in practical life he needs to know the rest, he can work it out for himself.

Much time also is lost by lack of facility in adding, subtracting, etc., and in correcting mistakes ; and to guard against this, I would have the child taught to add and subtract, multiply and divide, also measures and multiples before he *begins* to study arithmetic, even as early as the second year of his school life ; and I would have an exercise in them, purely as an exercise, every day if possible, till he enters the High School, and even longer. Thus could we secure facility and accuracy, two very important things in practical life.

**HOW TO TEACH LANGUAGES SO THAT THE PUPILS
SHALL GAIN THE GREATEST AMOUNT OF KNOWL-
EDGE IN THE LEAST TIME, WITHOUT OVERWORK.**

METHOD AND DETAILS TO SECOND CASE.

BEFORE giving method and details of this case, I will describe the circumstances under which it came under my treatment.

A little more than a year ago, a Frenchman about twenty-four years of age came to my house and asked me whether I was teacher of languages. He said, upon an affirmative answer on my part, that he could neither read nor write his own (French) language, and should like to take lessons, in order to learn reading and writing. How much would I charge per lesson ? Upon inquiry, I found that he was a common day-laborer, and if he could spare anything of what he earned, he was expected to assist his parents in Canada. I saw that he was very anxious to learn, and so I promised to give him lessons without charge, if he would study as I would direct him. He gladly consented to this, and I set him to work in the following way.

I took an easy French conversational book, and read to him to see whether he understood what I read. I have to mention that his French (Canadian) was considerably different from my French (continental) as far as pronunciation is concerned. I did not allow him to look in the book at the first reading, as I wished to have his whole attention. When I saw that he understood all, then I put the book before him and read the same passage slowly a second time, pointing at the words while I pronounced them. Then I read the same passage a third time, proposition after proposition, and made him pronounce every proposition after me. In this way he learned the propositions as wholes, and the words composing each proposition as wholes. I mentioned above that I read to him the subject I wish to be studied, so that he might grasp the subject as a whole, in order to be prepared for the parts composing this whole. Just as I had asked him to listen very attentively at the first reading, so I urged him to use his eyes very diligently at the second and third readings. Now I told him to study this passage so that he could read it well in the next lesson. In the next lesson I helped him over difficul-

ties in the first lesson, assigned a second passage, and also the first passage to review, etc. After a few lessons assigned in this way, I taught him the letters, but only phonetically. He soon fixed the letters. I made him also copy the letters, each of which I made carefully myself several times, so that he could see how it was made, and I made him write each letter before my eyes until he made it well. In the beginning, I required of him to write only the small letters of the alphabet, and after he could make them all (after nine lessons), I asked him to copy from the book. I enclose herewith his first copy, which speaks for itself. He said that he copied this in about fifteen minutes. Has not learned the capitals as yet.

la mère de votre papa est votre grand mère le père et la mère de votre maman sont votre grand père et votre grand mère. le frère de votre papa est votre oncle la sœur de votre papa est votre tante, le frère et la sœur de votre maman sont votre oncle et votre tante vous êtes le neveu de votre oncle l'enfant de votre papa et de votre maman est votre frère ou votre sœur l'enfant de votre oncle et de votre tante est votre cousin apportez à grand papa sa canne pour lui aider à marcher mettez le fauteuil auprès du feu pour grand maman votre tante a tricoté ces bas pour vous demandez à papa de jouer cache cache avec vous bachez vous sous le tablier de maman quand votre oncle viendra vous irez promener sur son cheval partagez votre gâteau avec vos frères et vos sœurs nous en verrons chercher vos cousins pour jouer avec vous nous aurons toute la famille ensemble combien avez vous de doigts mon petit voici quatre doigts à cette main et quel est celui-ci le pouce quatre doigts et le pouce ce la fait cinq et combien à l'autre main il y en a cinq aussi qu'est ce que c'est que ceci cest la main droite.

We kept on reading and reviewing; then he learned to write the capitals in the same way as he had learned to write the small letters. After twenty-four lessons, he could read any ordinary French with ease, and write a legible letter (of course not without misspellings) to his parents. He soon had to leave for home on account of family affairs. I never saw so much gratitude, gladness, satisfaction, and pride, as I saw in the countenance of that young man when he departed. How well was I repaid!

THIRD CASE.

How to teach Greek so as to enable the pupils to begin to read Xenophon's *Anabasis* after about twelve lessons. For method and details, see "Teacher" for September.

FRANCIS H. KIRMAYER.

MEETING OF HAMPDEN COUNTY TEACHERS' ASSOCIATION.

THE Twenty-seventh Annual Meeting was held at Springfield, on Friday and Saturday, May 15th and 16th.

The first session was opened Friday morning at Institute Hall, at 9½ o'clock. The President, A. E. Gibbs, of Westfield, was in the chair. Rev. A. D. Mayo, D. D., offered prayer. The records of the previous meeting were read by the Secretary, E. W. Norwood, of Brimfield.

After the appointment of the usual committees, and the reading of the report of the Treasurer, Charles Barrows, of Springfield, the following question was discussed:—

“Viewing education as the work of a copartnership, consisting of superintendents, school committees, teachers, parents, and other citizens, what is the province of each party, and to what extent does success depend upon their action severally?”

A. P. Stone, LL. D., superintendent of schools in Springfield, was the first speaker. He thought that the question would have been more appropriately introduced by a member of the school committee, inasmuch as that body holds all the power over school matters. No one else has any power, save as it is delegated to him by them. It is only until quite recently that the law gave committees the right to delegate any of their power to a superintendent. The superintendent is only the executive officer of the committee.

Success is seldom the result of a single agency. In a steamship the man down in the hold, who has his hand on the throttle-valve, may claim that he is the moving power,—that the vessel goes or stands still as he may elect. The man at the wheel in the pilot-house may say, that were it not for the constant exercise of his skill, the ship would soon be dashed upon the rocks. The captain may assert that all who consider themselves so efficient and essential in the management of the ship are merely servants obedient to his authority. The service of each is needful. So various agencies contribute to the success of our schools: the superintendent is one. Schools are good or bad as they are supervised. Supervision is regarded as essential in banks and in the management of railroads. Every good teacher desires supervision. How shall supervision be exercised? Educated men of leisure would make good supervisors, but there are few of them.

Committee men are generally too much occupied with other work. One man better than more, because unity of method can better be secured by one than by many. A superintendent will save more than the amount of his salary.

Mr. H. B. Lawrence, of Holyoke, spoke upon the province of teachers. He claimed that there is best success in securing discipline where teachers are most independent. The teacher must be the representative of authority in the discipline of the school, and should not be dictated to by a superintendent. Good teachers should have the largest liberty. No one else can so well understand the wants of the pupils. He must lead his pupils; and to do this well, he must study them not less than his books. No officers can impart the needful knowledge or tact. There is too much red-tape,—too much machine work. We should aim more at results. The best methods are those found out by the teacher himself in actual work. There should be no mere imitation; this is a prolific cause of failure. There should be sympathy between teacher and committee. Teachers are too much given to consulting policy. Teachers should confer freely with parents. Mere accessories do not ensure success. Individuality is of greater importance.

Rev. A. D. Mayo would have a kind of pastoral relation between parents

and teachers. More general interest is needed. Our institutes should have a missionary meeting connected with them. Educational influence is now moving from the west eastward. But everything tends towards grave errors. A crusade is needful to keep the people right. Reform is needed in our public school system, somewhat like that at which the civil service measure is aiming in politics. New York has abolished the political board of education and put a committee in its place. Politics must be kept out of educational matters. Parents have a right to demand a place. Teachers must know what is in the home. Teachers have a claim on the parents; they should have an opportunity to make their acquaintance.

Teachers should have all the authority their ability warrants. Three things essential: Careful training of teachers; better pay, and sharper discrimination between teachers; efficient supervision, and the whole backed by public sentiment.

Rev. J. W. Harding, of Longmeadow, said: As is the citizen so is the teacher. Larger intelligence is necessary to a just appreciation of the wants of the community. The ballot-box must be watched, that the very best men may be appointed. A correct public sentiment must be created. We must keep out of the ruts; must keep our just demands before the people. We need more sympathy, more progressiveness. Teachers need more appreciation from the community.

AFTERNOON SESSION.

Prof. J. G. Scott, of the Westfield Normal School, presented a paper on "Natural History in Common Schools."

Natural History is related to all the phenomena of life. The advantages arising from its pursuit are physical as well as mental. It cultivates the power of observation. Children are good observers, but are superficial, and need training. Our present courses of study are deficient in this.

The study of Natural History is beneficial physically, because it draws away the attention from the exercise itself. It cultivates observation, reflection, and, to some extent, language. It affords the best moral discipline, and begets self-respect in the pupil.

Its practical value is shown by what it has already made known in relation to the characteristics of injurious insects.

No adequate provision has yet been made for this branch. The work may be limited, but it will turn pupils in the right direction; it will bring them face to face with nature.

The discussion upon the question: What provision should be made in our courses of study and allotment of work, for differences in mental power and physical endurance of pupils of the same grade?—was opened by L. H. Marvell, superintendent of schools in Holyoke.

He said: There are some objections urged against the graded schools. The teacher does no thinking outside the work of his grade. About three pupils in a hundred are dunces, and cannot do the work. When pupils cannot keep up with their class, they should be placed in a school where they

will receive special instruction. It would be well to have one room ungraded to which such pupils can be transferred.

The work should be a little less than the average pupils can do. There should be much oral instruction. Books should be provided to occupy the time of the brilliant scholars.

Miss Ellen M. Strickland, of Springfield, said: The earnest inquiry of the public is: Cannot something be done to give pupils better command of their resources? The average duration of school life in Boston is four years. In Springfield more than one half of the pupils are in the primary schools. She raised the inquiry whether we cannot wisely introduce into our schools the cutting of garments and kindred useful arts. The experiment in Boston shows that the girls who spend a portion of their time in these manual occupations learn their lessons as well as those who attend to nothing beside the usual school exercises. Half-time pupils do as much work as those who are in school the whole day. Work and learning should go together. The pupil should be shown that his book knowledge has a purpose.

Pupils, during the last year of the Grammar School, and through the High School, might be allowed occasional rest if it were needed, without causing them to fall behind, as they could make up and be ready for examination.

Mr. S. F. Chester, of Springfield, thought that dull scholars are the element of difficulty in this problem. It would be better that they should go over the study a second time, or that special schools should be provided for them, than that they should retard the course of those who are able to go on successfully with greater rapidity. Those who are physically incapable of doing full work should be allowed to take less than the full quota of studies.

Mr. H. C. Hallowell, of Chicopee Falls, thought that we attempt to grade our schools too closely.

Prof. J. W. Dickinson, of the Westfield Normal School, presented a paper upon "Classification and Course of Study for Ungraded Schools." He maintained that the classification in most of our ungraded schools should be into primary, intermediate, and grammar divisions. The course of study for the primary division should furnish food for the activity of the perceptive powers, while linear drawing should be taught to aid the pupil in describing what he observes.

Object-teaching is a part of the primary course of study, and the teacher must look forward to the intermediate school in order to prepare his pupils to enter that school. The discipline of his power of observation which the pupil gets in the primary, prepares him to advance to higher studies in the next division. There should be object-teaching in every department of the ungraded school, that the pupil may be thereby prepared to enter upon his scientific studies with a mind well stored with facts gained by observation.

The teacher should aim to teach a plan of study rather than many facts or much science; to train the pupil's mind to think and behave properly, rather than to attempt to impart much knowledge.

Our teaching is too mechanical, and more attention is paid to forms than to the philosophy of teaching.

The evening session was held at the First Church. In the absence of the President, Mr. Hallowell, of Chicopee Falls, presided. The evening was occupied by a lecture from Rev. M. C. Stebbins of Springfield. A good audience listened attentively an hour and a quarter to a discussion of the question, — What is the matter with our Public Schools?

The Association met for its final session Saturday morning at 8½ o'clock. The nominating committee reported the following, who were unanimously chosen as officers for the ensuing year. President, A. E. Gibbs of Westfield; Vice-Presidents, J. G. Scott of Westfield, and H. C. Hallowell of Chicopee Falls; Secretary, E. W. Norwood of Brimfield; Treasurer, Charles Barrows of Springfield.

Rev. Charles Hammond then read an able paper upon "The relation of High Schools to Schools of a lower grade." He first considered the character and province of High Schools, maintaining that they are both *sui generis*, and peculiarly American. There is nothing corresponding to them, either in the English or European system of schools. The High School is the upper grade of our American system of public schools, and has no direct or necessary relation to our scientific schools and colleges. Statistics will show that not one in a thousand of the children in our public schools will go to college. This shows conclusively that the course of study in our High School should not be shaped with reference to candidates for college. To support this opinion he quoted President Eliot of Harvard University. There is a gap between the public schools and the college which should be filled by well-endorsed secondary schools.

Mr. E. H. Rice of Chicopee, claimed that there should be more attention paid to marking out the course of study for the schools below the High School, so that the proper quantity of work should be secured for a due preparation for the work in the High School. It should be expected that some work will be done out of school. There is need of larger recognition of this necessity on the part of parents.

It is, however, quite as important that special attention should be given to the quality as to the quantity of work. Pupils are too often taught to work by a rule, the reason of which they do not understand.

Mr. H. B. Richardson of Springfield, would have the work in the lower schools so arranged that pupils in passing to the High School should not be conscious of making any more of a transition than had attended their previous passing from one grade to another. He would not admit, even if Mr. Hammond's supposition were true, that only one in a thousand of all in the public schools go to college, that it does not pay well to have our High Schools do the work of preparing for college, since it is impossible to estimate the value of the service which a few thoroughly educated men render to the public.

A few others participated in the discussion, but the debate was cut short to give place to a teaching exercise by Mr. Geo. A. Walton of Westfield. He showed the need of a larger exercise of good judgment in the classification of pupils in many of our small ungraded schools. He had recently visited a school of eight scholars, in which there were six classes in reading; each

class was habitually called out with nearly as much formality as a military company on dress parade. This occasions great waste of time.

Mr. Walton then illustrated upon the board his method of teaching reading, by beginning with words; and also his method of teaching geography. The pupils should be taught to draw the outline of the state or country, mark off the division, locate important places, indicate the lines of rivers, and mountain ranges. Time should not be consumed in doing fine work on maps.

After the passage of the customary resolutions, the Association adjourned by singing Old Hundred. M. C. S.

WE wish to call attention to the advertisement in the "Teacher," of the Excelsior School Furniture Co. Their desks are in use in every State of the Union, and we are assured that they give entire satisfaction. The company have an excellent reputation for fair dealing, and are now offering unusual inducements to purchasers.

They furnish, also, globes, maps, blackboards, and school supplies of all kinds. We advise all purchasers to examine these desks, specimens of which may be seen at Thompson, Brown & Co.'s, 25 and 29 Cornhill, Boston.

INTELLIGENCE.

PERSONAL.

ELI S. SANDERSON, of Newton, graduates from the advanced or classic course of the Bridgewater Normal School. He had experience in teaching before entering upon the advanced course, and hence comes forth specially fitted for his work.

E. EMMA GROVER, a graduate of Bridgewater Normal School, has been appointed teacher in the Clark school for deaf mutes at Northampton.

HARRIET MORSE, of the class of '74, of B. N. S., has been appointed principal of the Grammar School at Wollaston Heights. Salary \$800.

MISS CLARA BARTLEY, for several years past teacher in the Eastern State Normal School, Maine, has closed her labors, having withdrawn from the ranks of the profession for duties more congenial.

CHAS. R. BROWN, formerly principal of the Phillips School, Salem, has settled in the practice of medicine in Lynn.

SARA E. KING, principal of the Oak Hill School, Newton, resigns her position at the close of the present term, after a service of five years in the school as assistant or principal.

MISS A. MESTEN is confirmed as teacher in the Winthrop district, Boston.

HELEN O. WYMAN, Lizzie A. Collihan, Mary J. Backup, Susan G. B. Garland, and Ellen R. Cole, in the Comins district, Boston.

WARREN T. COPELAND, widely known in the fraternity of teachers from his service in Milton and Watertown, as well as by his genial presence at the association, is doing temporary service in Cambridge.

JOSSIE A. KENNISTON is confirmed as teacher in the Dearborn district, and Ellen T. Noonan in the Norcross district.

L. F. WARD, formerly superintendent of schools at Northampton, has become principal of the Bellows Falls High School.

PROF. E. S. MORSE of Salem has received an appointment as instructor on mollusca at the Anderson School of Natural History on Penikese Island.

A. H. HEAP, the Amherst High School principal, will leave at the close of the present term on account of ill health.

PROF. CHAS. C. BRAGDON of Jennings Seminary, Aurora, Illinois, has been elected principal of the Lassell Seminary at Auburndale, to succeed the Rev. Chas. W. Cushing, whose resignation takes effect at the close of the present term. Mr. Cushing resigns solely on account of the continued ill health of his wife, and will accept a pastoral charge.

REV. DR. A. P. PEABODY of Harvard University gives the anniversary address before the young ladies of the Oread Institute at Worcester, next commencement.

PROF. YOUNG of Dartmouth College has accepted the invitation of the government to go to China with the scientific expedition to observe the transit of Venus.

EDWARD INGRAHAM, who has been superintendent of the State Reform School at Manchester for about five years, resigned last week, but whether he will accept the invitation to become superintendent of the Connecticut Reform School is not known. David Gillis, who has been one of the trustees of the institution for more than ten years, has also resigned.

THE BRIDGEWATER STATE NORMAL SCHOOL. — The graduating exercises take place July 17, at which time a class of twenty-six will graduate from the regular course and three from the special course.

THE Biennial Convention of the Bridgewater Normal Association will be held on Wednesday, the 15th of July. A biographical sketch of Marshall Conant, the second principal of the school, and several short memorial addresses will be given. This meeting will be of peculiar interest to members of the association. Mr. Boyden has been specially active in collecting information relative to the graduates, so that more can be learned of the alumni than ever before. The buildings and grounds have been greatly improved, making the attractions more than usual in many respects.

Mr. Thomas Barnes, of the Bigelow School, South Boston, is putting special labor into the arrangements, so that we may be assured that his fertile brain and executive qualities will assure a perfect programme well carried out.

CAMBRIDGE. — The absence of the labors of the superintendent are seen and felt in many ways, but the added vigilance of the masters and the co-operation of the assistants keep the internal

working of the various schools from suffering perceptibly, and the increased interest of the various special or sub-committees make up in part the loss of supervision.

The great improvements made in the school buildings of the city show themselves in the increased facility and comfort with which the pupils and teachers work. The ventilation of Mr. Wheelock's school-room is specially worthy the attention of those who want to secure perfect circulation of fresh air without exposing the health.

The following appointments have been made: —

Carrie H. Smith in the Putnam school, at \$500; Julia A. Williams in the Gore School, at \$700; Isabella B. Tenney in the Thorndike School, at \$700; S. N. Chamberlain in the Dana School, at \$500; Valeria A. Stiles in the Felton School, at \$500; Maria S. Cudder as a temporary assistant in the Felton School, at \$100 for the rest of the year; Laura Wright as a temporary assistant in the Willard School, at \$500; Kate D. Richardson in the Putnam School, at \$600.

An order making Decoration Day and the 17th of June school holidays was adopted.

READING. — The graduating exercises in connection with the High School were of a specially meritorious character. They were somewhat varied by the introduction of a colloquy regarding the relative merit of Whittier and Longfellow as poets. Misses Sadie Dewey and Kate L. Brown were the leading speakers, though all the class joined in the discussion, which was able, racy, and in every way meritorious. Messrs. Whittier and Longfellow had been invited to be present, and each sent a characteristic letter expressing regret at inability to accept the invitation, the former adding a few stanzas written for the occasion. The whole was as unique as are the various designs of Mr. Cole to arouse enthusiasm and develop the original genius of his pupils.

HOLLISTON. — *Supt. of Schools.* At a special meeting of the School Board, held on Tuesday evening, Rev. R. G. Johnson was re-elected Superintendent of Schools, in accordance with the recent wise determination of the town to continue a system which has proved most satisfactory during the past year.

LYNN. — *School Committee.* A regular meeting of the Board of School Committee was held last evening, President Hill

in the chair. Miss Abbie Grant and Miss Georgiana Lewis were elected teachers in the Holly Street Grammar School. Miss Mary L. Chapman was elected an assistant in the Howard Primary School, vice Miss Lewis resigned. The question of providing additional accommodations for pupils of the public schools was discussed, but no action was taken.

PORTSMOUTH, N. H. — Mr. Aurin M. Payson, Principal of the High School, has resigned his position, and has accepted the Superintendency of a school at Wakefield, Mass. We are informed that an able female preceptress, whom the committee have in view, will be invited to fill the duties of head teacher of the Girls' High School, with Miss Kate Hooper now of the Haven School of this city, as assistant. If this change brings with it the fruits that its friends anticipate, it will without doubt place our High School on a par with other schools in New England of like grade.

A WORK on Harvard College, soon to be published, will be one of unusual interest, both from the nature of the subjects treated and the character of the writers. The book will embody a history of the college, written by Samuel Eliot, which will treat of former customs of the various societies that have flourished at different times, of the papers, magazines, and publications of the undergraduates, dealing more especially with the social life of the students, which as yet remains in great part unwritten; there will also be separate histories of the buildings. The work is to be illustrated by heliotypes of the buildings, society rooms, etc., and a few of the former presidents. Among the contributors will be the venerable J. L. Sibley, the librarian, who will give a history of Gore hall and the library; Oliver Wendell Holmes will give a history of the medical school and the old Holmes house; Col. Higginson, of the gymnasium; ex-Gov. Emory Washburn, of Dane hall; Asa Gray, of the botanic gardens; A. P. Cranch will write a poem on Memorial hall, while the rest of the programme is about as appetizing. The book will be published in the fall by subscription.

THE Hon. Thaddeus Fairbanks, of St. Johnsbury, Vt., inventor of the Fairbanks Scales, who has just erected an elegant building, at a cost of \$103,000, for an academy in his native State, has been created, by the Emperor of Austria, a

knight of the Imperial Order of Francis Joseph — the only instance, it is said, in which this honor has been conferred upon an American Exhibitor at the Vienna Exposition.

THERE are in this country, of school age, 14,500,000 children. There is annually expended for schools the sum of \$95,000,000, which is equal to one third of one per cent of the property, real and personal, of the whole country. We employ 221,000 teachers; and the National Government has already set aside for educational purposes, 140,000 acres of public land.

THE many friends of Prof. James K. Hosmer, formerly over the Unitarian church in Deerfield, and now a professor in the State university of Missouri at Columbia, will be interested to hear that he has received a most desirable appointment to a professorship in the Washington University at St. Louis, and will enter upon his duties there in the early autumn.

THE young ladies of Prospect Hill School, Greenfield, are cultivating athletic sports. Much of their leisure time of late has been devoted to the "national game," which they play with quite as much skill and more evident pleasure than is generally manifested by the masculine devotees to the bat and ball. The contending nines are designated respectively by jaunty pink and white caps.

J. H. WALKER of Worcester has just given \$2,000 to the Worcester Free Institute.

THE Town of Newport has voted to lease to the Union School District the old Town Hall and Court House building, for a term of ninety-nine years, for the nominal sum of one dollar, for the purpose of a graded school. This building is admirably adapted for the purposes of Intermediate, Grammar, and High Schools. The Prudential Committee, R. S. Howe, Edmund Wheeler, and George R. Brown, will immediately remodel it, making four schoolrooms for the different departments. The best school furniture will be provided for the same, and all the schools will commence the first June.

THE geological cabinet of the Connecticut literary institution at Suffield, with the large addition it recently had given by Rev. S. C. Chandler of Granville, Mass., the well-known geologist, is probably the best one in New England outside of the colleges. The gift of

Prof. Chandler is valued at \$2,500, though the donor has expended more than that in collecting it.

THE Rogers High School building at Newport, erected through the munificence of William Sanford Rogers, of Boston, at a cost of \$130,000, is now completed, and makes an elegant and imposing appearance.

OF the two hundred and thirty-four young men who have been connected with the Mass. Agricultural College since its establishment, about seventy are known to be engaged in agricultural pursuits, and nearly all are at work in some

industrial occupation. Next to farming, civil engineering is a favorite pursuit with the graduates.

A \$1,750 school-house is to replace the one recently burnt in the Pochassic district of Westfield.

THE application for admission to the Anderson School of Natural History at Penikese number nearly one hundred and fifty, though not more than a third of that number can possibly be admitted. The necessary buildings have been erected, but there is very little money left to carry on the institution.

Books.

THE BOSTON UNIVERSITY YEAR BOOK. VOL. I.

We propose in our next number to say something of this young institution, which has begun its work so quietly, and which promises, by its wise management and thorough appreciation of the wants of the community, to become, at no distant day, one of our most efficient agencies for the promotion of sound learning.

BOOKS RECEIVED.

"MY VISIT TO THE SUN." By Lawrence S. Benson. James S. Brunton, N.Y.

ILLUSTRATED CATALOGUE OF CHIVALRIE, WITH THE RULES OF THE GAME. West & Lee, Game and Printing Co., Worcester.

PROGRESSIVE AND PRACTICAL METHOD FOR THE STUDY OF THE FRENCH LANGUAGE. By F. Duffet. Part 2d. Wilson, Hinkle & Co.

TWELVE LECTURES ON THE HISTORY OF PEDAGOGY. By W. N. Hailman. Wilson, Hinkle & Co.

OLD AND NEW, LIPPINCOTT, OLIVER OPTIC, AND THE ATLANTIC.